

B.) AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings of claims in the Application.

1. (currently amended) A variable speed drive comprising:

a converter stage to convert an AC voltage to a DC voltage, the converter stage being configured to be electrically connectable to an AC power source;

a DC link stage to filter and store energy from the converter stage, the DC link stage being electrically connected to the converter stage;

an inverter stage comprising a plurality of inverters electrically connected in parallel to the DC link stage, each inverter of the plurality of inverters being configured to convert a DC voltage to an AC voltage to power a corresponding load, each inverter of the plurality of inverters being configured and disposed to receive an individual control signal from a control panel system that is separate and independent from control signals provided to other inverters of the plurality of inverters, and each inverter of the plurality of inverters being controlled and operated substantially independently of other inverters of the plurality of inverters by the individual control signals received from the control panel system; and

wherein each inverter of the plurality of inverters comprises wire bonds sized to disconnect the inverter from the DC link stage in the event a fault occurs in one of the inverter or the corresponding load powered by the inverter.

2. (previously presented) The variable speed drive of claim 1 wherein the control system controls operation of the converter stage.
3. (previously presented) The variable speed drive of claim 1 wherein the control system controls the plurality of inverters as a group.
4. (previously presented) The variable speed drive of claim 3 wherein the control system provides a common set of control instructions to each inverter of the plurality of inverters to control operation of the plurality of inverters.

5. (previously presented) The variable speed drive of claim 1 wherein the control system individually controls each inverter of the plurality of inverters.
6. (previously presented) The variable speed drive of claim 5 wherein the control system provides a different set of control instructions to each inverter of the plurality of inverters to control operation of the corresponding inverter.
7. (original) The variable speed drive of claim 1 wherein the converter stage is configured in a rectifier arrangement having electronic switches that are switchable only to an on position.
8. (original) The variable speed drive of claim 1 wherein the converter stage is configured in a converter arrangement having electronic switches that are switchable to an on position and an off position.
9. (original) The variable speed drive of claim 8 wherein the converter arrangement has a configuration selected from the group consisting of boost conversion, buck conversion and boost/buck conversion.
10. (canceled)
11. (previously presented) The variable speed drive of claim 1 wherein the plurality of inverters comprises one of two inverters or three inverters.
12. (original) The variable speed drive of claim 1 wherein each inverter of the plurality of inverters is configured to provide a voltage and frequency to a corresponding load greater than a rated voltage and frequency of the corresponding load.
13. (currently amended) A chiller system comprising:
 - a first refrigerant circuit, the first refrigerant circuit comprising a first compressor driven by a first motor, a first condenser arrangement and a first evaporator arrangement connected in a closed refrigerant loop;
 - a second refrigerant circuit, the second refrigerant circuit comprising a second compressor driven by a second motor, a second condenser arrangement and a second evaporator arrangement connected in a closed refrigerant loop; and
 - a variable speed drive comprising:

a converter stage to convert an AC voltage to a DC voltage, the converter stage being configured to be electrically connectable to an AC power source;

a DC link stage to filter and store energy from the converter stage, the DC link stage being electrically connected to the converter stage;

an inverter stage comprising a first inverter and a second inverter each electrically connected in parallel to the DC link stage, the first inverter being configured to convert a DC voltage to an AC voltage to power the first motor, the second inverter being configured to convert a DC voltage to an AC voltage to power the second motor, the first inverter and the second inverter each being configured and disposed to receive an individual control signal from a control panel system that is separate and independent from control signals provided to the other inverter, and the first inverter and the second inverter each being controlled and operated substantially independently of each other by the individual control signals received from the control panel system; and

wherein the first inverter and the second inverter each comprise wire bonds sized to disconnect the inverter from the DC link stage in the event a fault occurs in one of the inverter and the corresponding motor powered by the inverter.

14. (previously presented) The chiller system of claim 13 wherein the control system also controls operation of the converter stage.

15. (previously presented) The chiller system of claim 14 wherein the control system provides a common set of control instructions to the first inverter and the second inverter, wherein the first inverter and the second inverter provide AC power at a same frequency and voltage to the first motor and the second motor in response to the common set of control instructions.

16. (original) The chiller system of claim 13 wherein the first condenser arrangement and the second condenser arrangement each comprise a portion of a combined condenser system.

17. (original) The chiller system of claim 13 wherein the first evaporator arrangement and the second evaporator arrangement each comprise a portion of a combined evaporator system.
18. (original) The chiller system of claim 13 wherein the first inverter and the second inverter are configured to provide a voltage and frequency to the first motor and the second motor greater than a rated voltage and frequency for the first motor and the second motor.
19. (currently amended) A variable speed drive for a chiller system having a plurality of compressors, the variable speed drive comprising:
 - a converter section to convert an AC voltage to a DC voltage, the converter section being configured to be electrically connectable to an AC power source;
 - a DC link section to filter and store energy from the converter section, the DC link section having a DC bus being electrically connected to the converter section;
 - an inverter section comprising a plurality of inverters electrically connected in parallel to the DC link section, each inverter of the plurality of inverters being configured to convert a DC voltage to an AC voltage to power a corresponding compressor motor, each inverter of the plurality of inverters being configured and disposed to receive an individual control signal from a control panel system that is separate and independent from control signals provided to other inverters of the plurality of inverters, and each inverter of the plurality of inverters being controlled and operated substantially independently of other inverters of the plurality of inverters by the individual control signals received from the control panel system;
 - and

wherein each inverter of the plurality of inverters comprises wire bonds sized to disconnect the inverter from the DC link stage in the event a fault occurs in one of the inverter and the corresponding compressor motor.
20. (previously presented) The variable speed drive of claim 19 wherein the control system controls operation of the converter section.
21. (previously presented) The variable speed drive of claim 19 wherein the control system controls the plurality of inverters as a group.

22. (previously presented) The variable speed drive of claim 21 wherein the control system provides a common set of control instructions to each inverter of the plurality of inverters to control operation of the plurality of inverters.
23. (previously presented) The variable speed drive of claim 19 wherein the control system individually controls each inverter of the plurality of inverters.
24. (previously presented) The variable speed drive of claim 23 wherein the control system provides a different set of control instructions to each inverter of the plurality of inverters to control operation of the corresponding inverter.
25. (original) The variable speed drive of claim 19 wherein the converter section comprises at least one silicon controlled rectifier.
26. (canceled)
27. (previously presented) The variable speed drive of claim 19 wherein the plurality of inverters comprises one of two inverters or three inverters.
28. (original) The variable speed drive of claim 19 wherein each inverter of the plurality of inverters comprises at least one integrated bipolar transistor power switch and at least one inverse diode.
29. (original) The variable speed drive of claim 19 wherein the DC link section comprises at least one capacitor.
30. (original) The variable speed drive of claim 19 wherein:
 - the DC bus comprises a positive rail and a negative rail;
 - the converter section comprises at least one output connected to the positive rail of the DC bus and at least one output connected to the negative rail of the DC bus;
 - and
 - each inverter of the plurality of inverters comprises at least one input connected to the positive rail of the DC bus and at least one input connected to the negative rail of the DC bus.

31. (original) The variable speed drive of claim 19 further comprising a circuit breaker electrically connected in series between the AC power source and the converter section.
32. (original) The variable speed drive of claim 19 further comprising an autotransformer electrically connected in series between the AC power source and the converter section to convert an AC voltage from the AC power source to a desired AC voltage.
33. (original) The variable speed drive of claim 19 further comprising at least one fuse electrically connected in series between the AC power source and the converter section.
34. (original) The variable speed drive of claim 19 further comprising at least one inductor electrically connected in series between the AC power source and the converter section.